

**New Guidance For Safe Management Of Cathode Ray Tubes Destined For
Recycling
July 10, 2003**

The Wisconsin Department of Natural Resources has developed guidance that conditionally exempts cathode ray tubes (CRTs) destined for legitimate recycling from the state's Hazardous Waste Rules. This guidance ensures safe management of CRTs while also opening up opportunities for CRT recycling in the state. The guidance sets out management practices which are generally consistent with those in a draft federal rule proposed by EPA. Under the Wisconsin guidance, CRTs that are stored cannot be speculatively accumulated; this applies equally to all steps in the entire recycling process. The Wisconsin guidance is more restrictive than the draft federal rule, and is intended to discourage individuals or facilities from stockpiling large quantities of CRTs.

This guidance will remain in effect until the Department either adopts the federal rule after it is promulgated, or an equivalent rule.

Background: A CRT is the vacuum tube, composed primarily of glass, in the video display component found most often in televisions and computer monitors. CRT glass is highly recyclable, and can be used either as a feedstock to produce new CRTs or as a fluxing agent in the lead smelting industry. To economically process and ship CRTs for glass recycling requires dismantling of the components of the television or computer monitor. The television cabinet or computer monitor case and other materials must be removed from the glass. Often CRTs are broken to separate the glass with a lower lead content from the higher lead glass. This makes the glass more desirable for recycling.

In Wisconsin, hazardous wastes are regulated under chapters NR 600 to 685, Wis. Adm. Code. These rules were developed to ensure the sound, safe management and disposal of hazardous wastes. Used CRTs intended for disposal or recycling are usually considered to be hazardous waste due to high levels of lead in the glass.

Prior to issuance of this guidance, persons breaking CRTs, including CRT processors, were required to comply with the hazardous waste rules. Increased costs associated with compliance with these rules may have discouraged recycling of this waste stream, and may have limited local recycling options. Management standards for intact or unprocessed CRTs destined for recycling were specified in a previous Department guidance memo entitled "Management of Wisconsin-Specific Universal Wastes".

There are situations such as this where certain hazardous wastes can be managed safely and in an environmentally sound manner without the full regulatory burden of the hazardous waste rules. Examples of this are the universal wastes, such as mercury thermometers and some batteries and pesticides, which have reduced regulatory requirements if they are properly recycled.

The Department will exercise discretion in enforcing the hazardous waste rules for persons or facilities that properly manage CRTs destined for recycling according to the new guidance.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 10, 2003

TO: Jay Hochmuth, AD/5
Jack Sullivan, AD/5

FROM:  Sue Bangert, WA/3

SUBJECT: Management of Cathode Ray Tubes in Wisconsin

Background:

Wisconsin's hazardous wastes are regulated under ch. 291 Wis. Stats. and chs. NR 600 to 690 Wis. Adm. Code. These rules were developed to ensure sound, safe management and disposal of hazardous wastes. Cathode ray tubes (CRTs) are found most often in televisions and computer monitors, and usually fail the toxicity characteristic (TCLP) for lead due to the high levels of lead in the CRT glass. However, CRT glass is highly recyclable as a feedstock for new CRTs or for use as a fluxing agent by lead smelters.

CRT recycling requires that certain procedures be done to economically process and ship CRTs for glass recycling. The CRT glass in the computer monitor case or TV cabinet, and printed circuit boards and other materials must be removed to ensure the glass is not contaminated with "foreign" materials. CRT processors generally break the "gun" off the back of the cone, and then separate the face glass (which usually does not contain lead) from the cone glass (which always contains high levels of lead). Separating the funnel from the cone makes the glass much more desirable for glass recycling.

In Wisconsin, persons breaking CRTs, including CRT processors, are presently required to comply with the hazardous waste rules in ch. NR 600 - 685 Wis. Adm. Code. Increased costs associated with processing CRTs in Wisconsin may limit local recycling options and discourage recycling of this waste stream. There are many situations where hazardous wastes can be managed safely for recycling that do not require the full regulatory burden of hazardous waste rules. Cases in point are those universal wastes regulated under ch. NR 690 Wis. Adm. Code, including mercury thermometers and hazardous waste batteries.

Proposal:

The Department proposes to exercise discretion in enforcing the current hazardous waste rules in chs. NR 600 - 685 Wis. Adm. Code for facilities that manage used and unused CRTs if they comply with the following standards. This new guidance is based on the management standards in the draft federal CRT rule, proposing revisions to 40 CFR 261.4 and 261.39. The Department will consider adopting these rule revisions after the federal rule is promulgated. This guidance shall remain in effect until the Department either adopts the federal CRT rule, or rescinds or modifies the guidance.

Definitions:

Cathode ray tube or CRT means a vacuum tube, composed primarily of glass, which is the video display component of a television or computer monitor. An intact CRT means a CRT remaining within the monitor whose vacuum has not been released. A broken CRT means glass removed from the monitor after the vacuum has been released, or any CRT whose vacuum has been released. For the purposes of

this guidance, CRT refers to any CRT that is used, unused, intact, broken or processed.

CRT Processing means conducting any of the following activities:

- ◆ Receiving broken or intact CRTs
- ◆ Intentionally breaking intact CRTs or further breaking or separating broken CRTs
- ◆ Sorting or otherwise managing glass removed from CRT monitors
- ◆ Cleaning coatings off the glass removed from CRTs

Management Standards for CRTs Destined for Recycling:

CRTs that are being managed or processed under the guidance of this memo must be managed in a manner that protects human health and the environment. If any hazardous waste or hazardous substance, including any material covered in this memo is discharged to the environment, the spill response procedures in ch. NR 706 Wis. Adm. Code apply. For information on worker safety and health, contact the Occupational Safety and Health Administration (OSHA) at (608) 441-5338.

The management standards outlined below are adopted from the proposed 40 CFR 261.4 and 261.39. Note: Wisconsin does not exclude CRTs from solid waste regulations, but will allow CRTs destined for recycling to be managed as follows:

- ◆ **Storage:** Broken or processed CRTs must either be stored in a building with a roof, floor and walls, or placed in a container (*i.e. a package or a vehicle*) that is constructed, filled and closed to minimize identifiable releases of CRT glass to the environment (including fine solid materials). Intact CRTs may be stored at a facility without being placed in a building or container as long as they are not speculatively accumulated (see definition of speculative accumulation below) or managed in a manner that constitutes disposal.
- ◆ **Labeling:** Each container in which broken or processed CRTs are contained must be labeled or marked clearly with one of the following phrases: "waste cathode ray tubes - contains leaded glass" or "used cathode ray tubes - contains leaded glass." It must also be labeled: "do not mix with other glass materials."
- ◆ **Transportation:** All broken or processed CRTs must be transported in a container that meets the requirements described in the storage and labeling standards above.
- ◆ **Speculative Accumulation:** All CRTs are subject to speculative accumulation as defined in ch. NR 600.03 (211) Wis. Adm. Code. Speculative accumulation means that accumulating materials before recycling is not allowed unless the person accumulating the material can show that the material is potentially recyclable and has a feasible means of recycling. Also, the amount of material that is recycled or transferred to a different site for recycling must equal at least 75% by weight or volume of that material accumulated over the beginning of the period. CRT glass sent to CRT glass making or lead smelting is not a hazardous waste unless it is speculatively accumulated. Facilities managing CRTs shall keep records for three years to verify CRTs have been recycled and have not been speculatively accumulated.

Requirements for CRT processing:

- ◆ **Storage:** CRTs undergoing processing are subject to the same requirements for storage, labeling and speculative accumulation as stated above for CRTs destined for recycling. Speculative accumulation of CRTs is not allowed.

- ◆ **Processing:** All CRTs must be processed within a building with a roof, floor and walls, and no activities may be performed that use temperatures high enough to volatilize lead from CRTs.
- ◆ **Record keeping:** Facilities accumulating or processing CRTs must keep records for at least three years to verify that CRTs are being recycled and to demonstrate that they have not speculatively accumulated CRTs.

After Processing: Processed CRT glass sent to CRT glass making or lead smelting is subject to the same management requirements as CRTs destined for glass recycling as described in this guidance.

Processed CRT glass sent to other types of legitimate recycling, except if used in a manner constituting disposal is also subject to the same management requirements as CRTs destined for recycling described in this guidance.

All CRT glass used in a manner constituting disposal is not subject to reduced management standards outlined in this guidance. This glass may be subject to full hazardous waste management standards found in chs. NR 600-685, Wis. Adm. Code.

In summary, the following are some of the reduced requirements from hazardous waste regulation for facilities managing used and unused CRTs.

- ◆ Facilities accumulating or processing CRTs, or both, do not need to notify DNR of their status as a generator of hazardous waste if the materials are destined for glass recycling, and the standards outlined in this guidance are followed.
- ◆ Facilities shipping CRTs to a glass recycler are not required to use a licensed hazardous waste or solid waste transporter.
- ◆ Facilities shipping CRTs for glass recycling are not required to use a hazardous waste manifest.

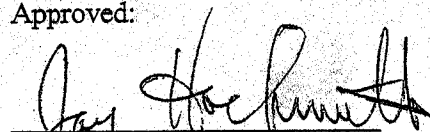
Disclaimer:

This guidance is in effect from the date this memo is signed until the Department promulgates final rules on the management of Cathode Ray Tube processing. The Department may modify or withdraw this memo, in whole or in part, at any time.

The Department believes that this guidance will encourage recycling and improve proper and responsible management of CRTs destined for glass-to-glass recycling by substantially reducing the hazardous waste requirements. The Special Waste Team recommends that the Department allow processors and transporters of processed CRTs to manage those CRTs in the manner proposed herein. This approach meets the needs of processors and transporters of processed CRTs and is protective of public health and the environment.

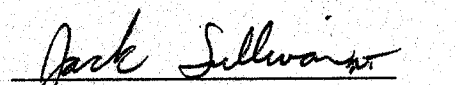
This document is intended solely as guidance, and does not contain any mandatory requirements except where reference is made to requirements found in statute or administrative rule. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin, or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

Approved:


Jay Hochmuth, Administrator
Division of Air and Waste

Dated:

7/9/03


Jack Sullivan, Administrator
Division of Enforcement and Science

7/10/03

cc. DNR_WA_HWT
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